Full Listing of Claims.

1. (Currently amended) A network of remote sensing node assemblies, each ~~a first and second~~ of which [[~~each~~]] has a sensor element, the network comprising:

(a) each of the sensor elements adapted for immersion within a liquid environment for sensing therewithin, a first and second of the sensing node assemblies to function, respectively, as a first and second parent node, each within an acoustic transmission range with at least one other of the sensing node assemblies;

(b) each respective one of the ~~first and second~~ node assemblies to comprise: a source of power for said respective node assembly[[~~, and~~]]; a transducer for receiving acoustic waves transmitted from a different one of the node assemblies while immersed within said liquid environment[[,]]; acoustic-transducer circuitry for converting said acoustic waves received by said different node assemblies, into signals; a controller adapted for local processing of said signals within said respective node assembly; said transducer further adapted for emitting, for transmission through said liquid environment, sensor information collected about said liquid environment by the sensor element of said respective node assembly; [[~~and~~]]

(c) ~~a third~~ each said respective node assembly adapted for ~~receiving and~~ processing said sensor information collected about said liquid environment by the sensor element of ~~acoustically transmitted from each~~ said respective node assembly; and

(d) a third one of the sensing node assemblies further adapted for transmitting said sensor information collected by said third node assembly to a remote host .

2. (Cancel) The network of claim 1 wherein said each respective node assembly further comprises:

(a) acoustic-transducer circuitry for converting said acoustic waves received by said respective node assembly, into signals; and

(b) a controller adapted for local processing of said signals within said respective node assembly, said local processing to comprise converting said signals into modulated signals for said emitting by said transducer.

3. (Currently amended) The network of claim [[2]] 1 wherein: said local processing of said signals within said respective node assembly comprises converting said signals into modulated signals for said emitting by said transducer; said modulated signals are further converted into a series of voltage pulses representing an encoding of said signals; said acoustic-transducer circuitry is further adapted for amplifying said series of voltage pulses; and said transducer comprises a plurality of directional transducers.

4. (Currently amended) The network of claim [[2]] 1 wherein: said local processing of said signals within said respective node assembly comprises converting said signals into modulated signals for said emitting by said transducer; said acoustic-transducer circuitry is further adapted for converting said modulated signals, into a series of voltage pulses which are then amplified prior to said emitting by said transducer; and said transducer comprises an omni-directional transducer.

5. (Cancel) The network of claim 2 wherein:
(a) said signals are electronic signals;
(b) said modulated signals are further converted into a series of voltage pulses; and
(c) said third node assembly further comprises a third-node processor adapted for said third node processing, and means for transmitting said sensor information from said third node assembly to a remote host.

6. (Currently amended) The network of claim [[5]] 1 wherein:
[[~~(a)~~]] said third node assembly further comprises ~~an acoustic transducer adapted for said receiving while immersed in said liquid environment; and~~
~~(b) said~~ means for transmitting said sensor information to said remote host [[is]] selected from the group consisting of a radio frequency (RF) wave transceiver, a fiber-optic cable, an infrared (IR) transceiver, an optical transceiver, a microwave transceiver, a connection through conductive media, and an assembly comprising a cable and a connector.

7. (Currently amended) The network of claim [[5]] 4 wherein:

(a) said converting said signals into modulated signals comprises employing a technique selected from the group consisting of On-Off Keying, Digital Pulse Interval Modulation, Phase-shift Keying, Frequency-shift Keying, Amplitude-shift Keying, Quadrature Phase-shift Keying, Quadrature Amplitude Modulation, and Multiple Frequency-shift Keying;

(b) ~~each of the first and second node assembly controllers is adapted for performing said further conversion of said modulated signals into said series of voltage pulses, said series of voltage pulses being amplified prior to said emitting~~; and

(c) said processing by said third node comprises converting said sensor information acoustically received thereby having been collected about said liquid environment by the sensor element of said respective node assemblies , into a collection of data about said liquid environment for said transmitting to said remote host.

8. (Currently amended) The network of claim 1 wherein:

(a) said third node assembly comprises means for transmitting said sensor information to [[a]] said remote host selected from the group consisting of a radio frequency (RF) wave transceiver, a fiber-optic cable, an infrared (IR) transceiver, an optical transceiver, a microwave transceiver, a connection through conductive media, and an assembly comprising a cable and a connector; and

(b) said host is adapted for communicating with a computerized device, said computerized device comprising an interface adapted for accessing said sensor information as a compilation of sensing data.

9. (Cancel) The network of claim 8 wherein:

(a) said third node assembly further comprises an acoustic transducer adapted for said receiving while immersed in said liquid environment; and

(b) said means for transmitting said sensor information to said remote host is selected from the group consisting of a radio frequency (RF) wave transceiver, a fiber-optic cable, an infrared (IR) transceiver, an optical transceiver, a microwave transceiver, a connection through conductive media, and an assembly comprising a cable and a connector.

10. (Currently amended) The network of claim 8 wherein:

(a) said liquid environment is an aqueous body;

(b) the first and second node assemblies are immersed in said aqueous body for said sensing;

(c) ~~said third node assembly further comprises an acoustic transducer adapted for said receiving while immersed in said aqueous body;~~ and

[[~~(d)~~]] said means for transmitting said sensor information to said remote host is adapted for operation for said transmitting when not immersed in said aqueous body.

11. (Currently amended) The network of claim 8 wherein:

(a) said remote host comprises means for directly receiving said sensor information collected by said third node assembly and that collected by the sensor elements of other said respective node assemblies;

(b) said computerized device is adapted for at least partially generating said compilation of sensing data;

(c) said third node assembly is further adapted to, upon receiving instructions, transmitting a broadcast message to each said respective node assembly within an acoustic transmission range instructing a respective sensor element of said respective node assembly to perform said sensing; and

(d) in response thereto, said sensor information is acoustically transmitted from each said respective node assembly having received said broadcast message, to said third node assembly, ~~said third node assembly further comprises a third node processor adapted~~ for said third node processing.

12. (Cancel) The network of claim 11 wherein:

(a) said each respective node assembly further comprises: acoustic-transducer circuitry for converting said acoustic waves received by said respective node assembly, into signals; and a respective-node controller adapted for local processing of said signals within said respective node assembly, said local processing to comprise evaluating said sensor information collected about said liquid environment and further converting said signals into modulated signals for said emitting from said respective node assembly; and

(b) said processing by said third-node processor comprises evaluating said sensor information acoustically received by said third node assembly, for evaluation to generate a collection of data for said transmitting to said remote host.

13. (Currently amended) The network of claim 8 wherein:

(a) said each respective node assembly further comprises respective-node controller circuitry adapted for periodic activation of the sensor element of said respective node assembly to perform said sensing; upon performing said sensing, in the event a threshold value is exceeded, a node message is emitted from said transducer of said respective node assembly comprising said sensor information;

(b) said third node assembly further ~~comprises a third node processor, said processing by said third node assembly to comprise~~ adapted for converting any said node messages received for transmitting ~~over said means~~ to said remote host; and

(c) said remote host comprises means for receiving said converted node messages.

14. **(Currently amended)** ~~The network of claim 13 further comprising a forth and fifth sensing node assembly, each having a plurality of sensor elements and a transducer for receiving acoustic waves transmitted from at least one of said different of the node assemblies while immersed in said liquid environment such that: said first and forth node assemblies are within an acoustic transmission range, respectively $r_{1,3}$ and $r_{4,3}$, of said third node assembly, said second node assembly is within an acoustic transmission range, $r_{2,1}$, of said first node assembly, and said fifth node assembly is within an acoustic transmission range, $r_{5,2}$, of said second node assembly; and wherein:~~

A network of remote sensing node assemblies, a first and second of which each has a sensor element, the network comprising:

(a) each of the sensor elements adapted for immersion within a liquid environment for sensing therewithin;

(b) each respective one of the first and second node assemblies to comprise: a source of power for said respective node assembly and a transducer for receiving acoustic waves transmitted from a different one of the node assemblies while immersed within said liquid environment, said transducer further adapted for emitting, for transmission through said liquid environment, sensor information collected about said liquid environment by the sensor element of said respective node assembly;

(c) a third node assembly adapted for receiving and processing any said sensor information acoustically transmitted from said respective node assemblies;

(d) said third node assembly comprises means for transmitting said sensor information to a remote host;

(e) said each respective node assembly further comprises respective-node controller circuitry adapted for periodic activation of the sensor element of said respective node assembly to perform said sensing; upon performing said sensing, in the event a threshold value is exceeded, a node message is emitted from said transducer of said respective node assembly comprising said sensor information; and

[[~~(a)~~]] (f) upon receiving any said node message, ~~said computerized device is adapted for generating~~ an alert-type message is generated for transmission by said remote host to said third node assembly instructing said respective node assemblies to decrease an interval time between each successive of said periodic activation~~; and~~

~~(b) said third node assembly further comprises an acoustic transducer adapted for said receiving of said node messages and transmitting said instructions to said respective node assemblies~~ .

Claims 15 - 29. (Cancel without prejudice)